

A large, light blue silhouette of a bird in flight, with its wings spread wide, serving as a background for the central text.

Swift Workshop:
Welcome & Observatory Status

John Nousek (Penn State University)



What's Next for Swift – Penn State – 1-2 May 2007

Swift Observatory Status



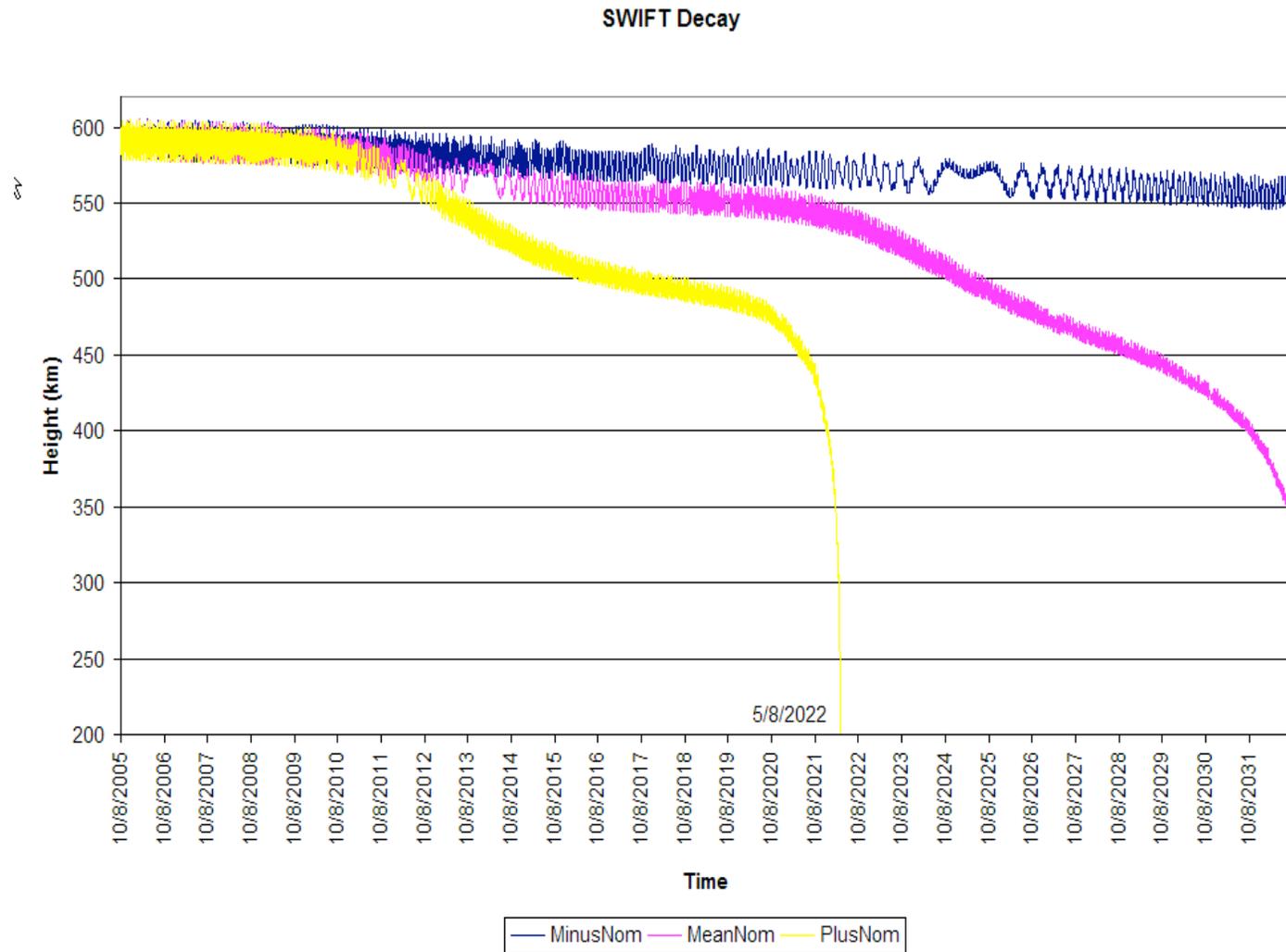
- ❑ **Observatory Science Up-time: 97%**
 - Except for rare spacecraft or instrument down-time and SAA passage, Swift collects data continuously
- ❑ **Ground Station Status: Nominal**
 - Malindi ~11000 passes since Launch, 99% successful
 - Some missed passes in past two weeks due to AGILE contention
 - No lost data, as data all successfully replayed from Solid State Recorder
- ❑ **Observatory Status: Nominal**
 - ACS: executed >70,000 slews, >99% within 3' accuracy
 - On day 072, Reaction Wheel #5 showed change in drag torque
 - No change in operational performance, no current plans for operational changes
- ❑ **Observatory Lifetime: Above prediction**
 - Orbital life expected to >2013, no observatory or instrument limits known
- ❑ **Flight Operations Team Response: Excellent**
 - On average, there was an FOT after hours response once every three days
- ❑ **Science Operations Team Response: Excellent**
 - SOT/BA team has responded to every GRB with prompt (typical < 1 hour) data analysis and preparation of GCN circulars, ATELS etc for about 200 events
 - Load for planning ToOs has shown steady increase in time

Orbital Lifetime

Alan Wells



Improved orbital prediction suggests extended mission life.



Reaction Wheel #5 Drag Torque



Day 72

- On day 72 drag torque showed a 'jump'
- Subsequent drag torque settled at new, apparently stable level
- General Dynamics & L3 are investigating but have no recommendations at this point
- We continue to monitor performance and will shut off RW-5 if necessary
- Observatory can function normally with loss of reaction wheel.

Day 115

Swift Mission Life



- ❑ **Observatory Status: No known limits**
 - Design life is 5 years
 - No sign of degradation in any system at this time
 - No consumables
- ❑ **Instrument Status: No known limits**
 - XRT micro-meteroid impact rate uncertain
 - Wells et al. conducted study which estimated rate of 0.1-0.2 hits per year
 - UVOT filter wheel is moving part; redundant assembly available
- ❑ **Mission Life Projection: Exceeds launch prediction**
 - No obvious life limitations
 - Probability is high that Swift will exceed 5 year lifetime goal



Swift Institutions



Executive Committee

- G. Chincarini - Brera Obs.
- N. Gehrels - GSFC
- P. Giommi - ASI
- K. Mason - MSSL
- J. Nousek - PSU
- J. Osborne - U. Leicester
- A. Wells - U. Leicester
- N. White - GSFC

Swift Observing Constraints



Swift has the following visibility constraints:

Constraint	Spacecraft	CHILE	TAKO	BAT	UVOT
EarthLimb	28°	28°	33°	—	26°
Moon	21°	21°	23°	23°	19°
Sun	45°	45°	46°	45°	44°
Ram	5°	—	10°	—	—